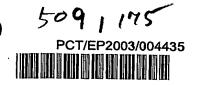
# PATENT COOPERATION TREATY



## **PCT**

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION		ication of Transmittal of International					
B01/0906PC		Premimary	Examination Report (Form PCT/IPEA/416)					
International application No. PCT/EP2003/004435	International filing date (day) 29 April 2003 (29.0		Priority date (day/month/year)					
International Patent Classification (IPC) or n	<u> </u>	4.2003)	30 April 2002 (30.04.2002)					
C07C 7/08	lational classification and IPC							
Applicant		· · · · · · · · · · · · · · · · · · ·	<del></del>					
BASF AKTIENGESELLSCHAFT								
<ol> <li>This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</li> </ol>								
2. This REPORT consists of a total of4 sheets, including this cover sheet.								
This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have								
been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).								
These annexes consist of a total of sheets.								
3. This report contains indications relat	ing to the following items:							
I Basis of the report								
П Priority								
III Non-establishment	of opinion with regard to nove	lty, inventive s	step and industrial applicability					
IV Lack of unity of in	vention							
V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;								
VI Certain documents cited								
VII Certain defects in the	VII Certain defects in the international application							
VIII Certain observations on the international application								
		·						
Date of submission of the demand		Date of completion of this report						
24 September 2003 (24.09	0.2003)	12 November 2003 (12.11.2003)						
Name and mailing address of the IPBA/EP	Author	Authorized officer						
Facsimile No.	Teleph	one No.						

Form PCT/IPEA/409 (cover sheet) (January 1994)

Translation

#### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

### PCT/EP2003/004435

I. Basis of the report							
1. This repounder Artic	rt has been drawn cle 14 are referred to	on the basis of (Replacement shee in this report as "originally filed"	ets which have been furnished to the receiving Office in response to an invitation " and are not annexed to the report since they do not contain amendments.):				
		l application as originally filed.					
$\boxtimes$	the description,	pages1-13	, as originally filed,				
		pages	_, filed with the demand,				
<u>'</u>		pages	, filed with the letter of,				
		pages	, filed with the letter of				
$\bowtie$	the claims,	Nos. 1-9	, as originally filed,				
<b>L</b>			, as amended under Article 19,				
		Nos	_, filed with the demand,				
		Nos.	, filed with the letter of ,				
		Nos.	, filed with the letter of				
$\bowtie$	the drawings,	sheets/fig1/2-2/2	_ , as originally filed,				
_		sheets/fig					
		sheets/fig	_ , filed with the letter of,				
			_ , filed with the letter of				
2. The amend	ments have resulte	ed in the cancellation of:					
	the description,	pages					
		Nos.					
		sheets/fig	•				
		<u> </u>					
3. This to go	report has been es	stablished as if (some of) the an	nendments had not been made, since they have been considered e Supplemental Box (Rule 70.2(c)).				
		as material in the	c Supplemental Box (Rule 70.2(c)).				
4. Additional	observations, if ne	cessary:					
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			<b>!</b>				



International application No. PCT/EP 03/04435

7.	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.	Statement			
	Novelty (N)	Claims	1-9	YES
	·	Claims		NO
	Inventive step (IS)	Claims	1-9	YES
		Claims		NO
	Industrial applicability (IA)	Claims	1-9	YES
		Claims		NO

#### 2. Citations and explanations

D1: US-A-4 555 312

D2: EP-A-0 079 679

The present application concerns a continuous method for obtaining butenes from a C4 fraction.

Document D2 is the closest prior art document and differs from the subject matter of the present application in that the features of the characterizing part of claim 1 are not disclosed, that is the fact that a partial stream is withdrawn from the degassing zone of a separation stage situated downstream of the inlet of the bottom stream coming from the washing zone, and the partial stream is heated and/or evaporated by indirect heat exchange with the hot bottom stream flowing out of the degassing zone and returned to the degassing zone in the same separation stage or upstream thereof.

The technical problem is therefore considered that of providing an improved method for obtaining butenes from a C4 fraction. The solution is set out in claim 1. A person skilled in the art proceeding from the closest prior art would not have been able to derive that the features "a partial stream is withdrawn from the degassing zone of a

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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separation stage situated downstream of the inlet of the bottom stream coming from the washing zone, and the partial stream is heated and/or evaporated by indirect heat exchange with the hot bottom stream flowing out of the degassing zone and returned to the degassing zone in the same separation stage or upstream thereof" would result in the energy reductions shown in the table on page 13 when a particular theoretical separation stage is selected.

The subject matter of claims 1-9 therefore meets the requirements of PCT Article 33(2) and (3).

The closest prior art document, document EP-A-0 079 679, should be mentioned in the application.